

In the Claims:

Please consider the claims as follows:

1.-4. (canceled)

5. (new) An apatite particle represented by a molecular formula $\text{Ca}_{10-x}\text{Mg}_x(\text{PO}_4)_6(\text{OH})_2$, where $x = 1, 2, \dots, 9$, or a chemical formula $\text{Ca}_{8-x}\text{Mg}_x\text{H}_2(\text{PO}_4)_6$, where $x = 1, 2, \dots, 7$, wherein the particle has a size of approximately 30 nm to 2500 nm.

6. (new) The apatite particle of claim 1, wherein the particle size is approximately 50 nm to 1000 nm.

7. (new) The apatite particle of claim 1, wherein the particle size is approximately 50 nm to 300 nm.

8. (new) A method of producing an apatite particle represented by a molecular formula $\text{Ca}_{10-x}\text{Mg}_x(\text{PO}_4)_6(\text{OH})_2$, where $x = 1, 2, \dots, 9$, or a chemical formula $\text{Ca}_{8-x}\text{Mg}_x\text{H}_2(\text{PO}_4)_6$, where $x = 1, 2, \dots, 7$, wherein the particle has a size of approximately 30 nm to 2500 nm, the method comprising incubating a solution containing inorganic phosphoric acid, calcium ions and magnesium ions for a predetermined time.

9. (new) The method of claim 8, wherein the particle size is approximately 50 nm to 1000 nm.

10. (new) The method of claim 8, wherein the particle size is approximately 50 nm to 300 nm.

11. (new) An apatite particle- gene complex in which a specified gene is combined with an apatite particle, the particle being represented by a molecular formula

$\text{Ca}_{10-x}\text{Mg}_x(\text{PO}_4)_6(\text{OH})_2$, where $x = 1, 2, \dots, 9$, or a chemical formula $\text{Ca}_{8-x}\text{Mg}_x\text{H}_2(\text{PO}_4)_6$, where $x = 1, 2, \dots, 7$, wherein the particle has a size of approximately 30 nm to 2500 nm.

12. (new) The apatite particle-gene complex of claim 11, wherein the particle size is approximately 50 nm to 1000 nm.

13. (new) The apatite particle-gene complex of claim 11, wherein the particle size is approximately 50 nm to 300 nm.

14. (new) A method of transfecting a preset gene into a specified cell by incubating, with said specified cell, an apatite particle- gene complex in which a preset gene is combined with an apatite particle represented by a molecular formula $\text{Ca}_{10-x}\text{Mg}_x(\text{PO}_4)_6(\text{OH})_2$, where $x = 1, 2, \dots, 9$, or by a chemical formula $\text{Ca}_{8-x}\text{Mg}_x\text{H}_2(\text{PO}_4)_6$, where $x = 1, 2, \dots, 7$, wherein the particle has a size of approximately 30 nm to 2500 nm.

15. (new) The method of claim 14, wherein the particle size is approximately 50 nm to 1000 nm.

16. (new) The method of claim 14, wherein the particle size is approximately 50 nm to 300 nm.